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EXAMINER	
MICHENER, JOSHUA J	
ART UNIT	PAPER NUMBER
3644	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,680	ELLNOR, PIET	
	Examiner	Art Unit	
	JOSHUA J. MICHENER	3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,7,8,11,13,16,17,19-22 and 24-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,7,8,11,13,16,17,19-22 and 24-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 July 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/27/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **"a spade rudder" and "a further propulsion unit in the form of a water propulsion means extending below said hull in the form of a retractable leg"** must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 27, 28 are objected to because of the following informalities:

Claims 27 and 28 recite, "stabiliser". It should be - -stabilizer- -;

Appropriate correction is required.

Abstract

4. The abstract of the disclosure is objected to because the abstract is over 150 words.

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Correction is required. See MPEP § 608.01(b).

Specification

The disclosure is objected to because of the following informalities:

5. The specification is repeat with the usage of "stabiliser" which should be - -stabilizer- -

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2, 7, 8, 11, 13, 16, 17, 19 - 22, 24 – 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. The term "substantial" in claim 1 is a relative term which renders the claim indefinite. The term "substantial" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Claim 1 recites, "…the canard forewing has a substantial portion with a dihedral configuration." Further, it is unclear as to what Applicant considers a substantial portion with a dihedral configuration. What portion, just the inner section? For instance, by definition a dihedral configuration would be the angle the canard makes with a horizontal line. Thus, the inner portion (35) is considered to be arranged at a dihedral angle, however the outer section (37) is generally parallel to a horizontal line. As such, it is unclear how, the inner section which may be about 2/3 of the surface area of the canard (generalized from the drawings) could reasonably be defined as being the substantial portion of the forewing being in a dihedral configuration as "substantial" generally means almost the whole. OR if Applicant considers the outer portion in a dihedral configuration, how is the "whole" canard forewing not just in a dihedral configuration? The use of substantial appears to indicate that some portion is not in a dihedral configuration. If this is the case could Applicant please point out where this portion is?

7. Claim 7 recites the limitation "the vertical" in lines 3 - 4. There is insufficient antecedent basis for this limitation in the claim.

8. Claim 27 recites the limitation "the rear" in line 3. There is insufficient antecedent basis for this limitation in the claim.

9. Claim 29 recites the limitation "the flow pathway" in lines 3 - 4. There is insufficient antecedent basis for this limitation in the claim.

10. Regarding claim 31, the phrase "preferably" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

11. Claim 31 recites, "...includes a ***further*** propulsion unit..." However, it appears Applicant is implying a propulsion unit is currently provided, but a first propulsion unit is not previously claimed, thus it is unclear how a "further" propulsion unit is being provided when one is not currently previously claimed.

12. Claims 2, 7, 8, 11, 13, 16, 17, 19 - 22, 24 – 31 are rejected as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 7, 20, 21, are rejected under 35 U.S.C. 102(b) as being anticipated by Fraser (US 3,954,231).

13. Regarding claim 1, as best understood, Fraser discloses a canard forewing (fig 21 below) and a main wing (delta wing), wherein the canard forewing has a substantial portion (inner portion) with a dihedral configuration. It is noted, an aircraft flying near the ground creates a

"ground effect". Fraser meets the claimed structure and would generate a ground effect when flying near the ground, thus meeting the scope of the claim.

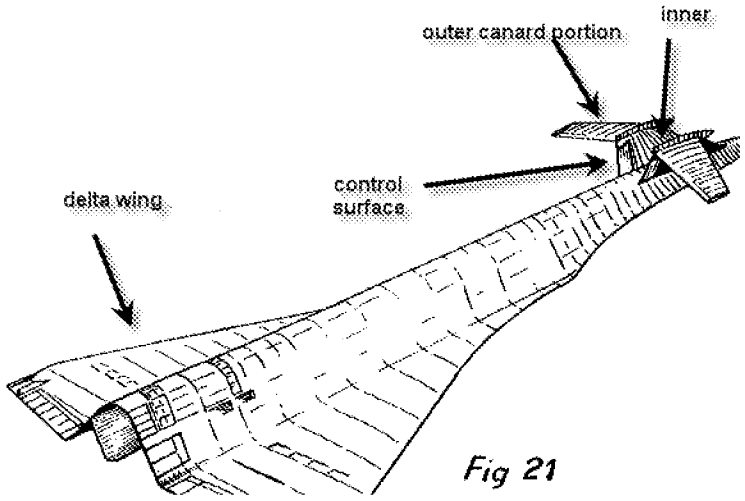

Fig 21

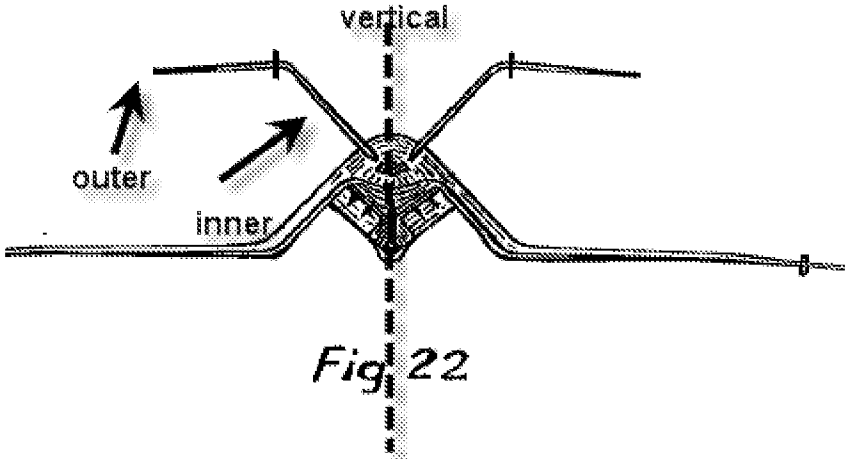

Fig 22

14. Re claim 7, the canard forewing has said a dihedral configuration in its inner portion, said inner portion being disposed at a first angle of inclination from the vertical (fig 22 above), said canard forewing having its outer portions disposed at a second angle of inclination from the vertical (fig 22 above) which is greater (i.e. about 90) in absolute terms than said first angle (i.e. about 45 – 70 degrees). It is noted, these relative angle approximations are considered to be

anticipated by the figures in the sense that it the first angle is clearly less than the second angle in absolute terms from the vertical. See MPEP 2125. Assuming arguendo that the figures fail to teach the claimed relationship with sufficient specificity, see alternative rejection under 35 USC 103.

15. Re claim 20, said canard forewing incorporates control surfaces (fig 21 above).

16. Re claim 21, said main wing is of forward delta configuration (fig 21 above).

Claims 1, 20, 25, 27 are ALTERNATIVELY rejected under 35 U.S.C. 102(b) as being anticipated by Fraser (US 3,954,231).

17. Regarding claim 1, as best understood, Fraser discloses a canard forewing (fig 11 below) and a main wing (fig 11), wherein the canard forewing has a substantial portion with a dihedral configuration (fig 11, col 6, line 63).

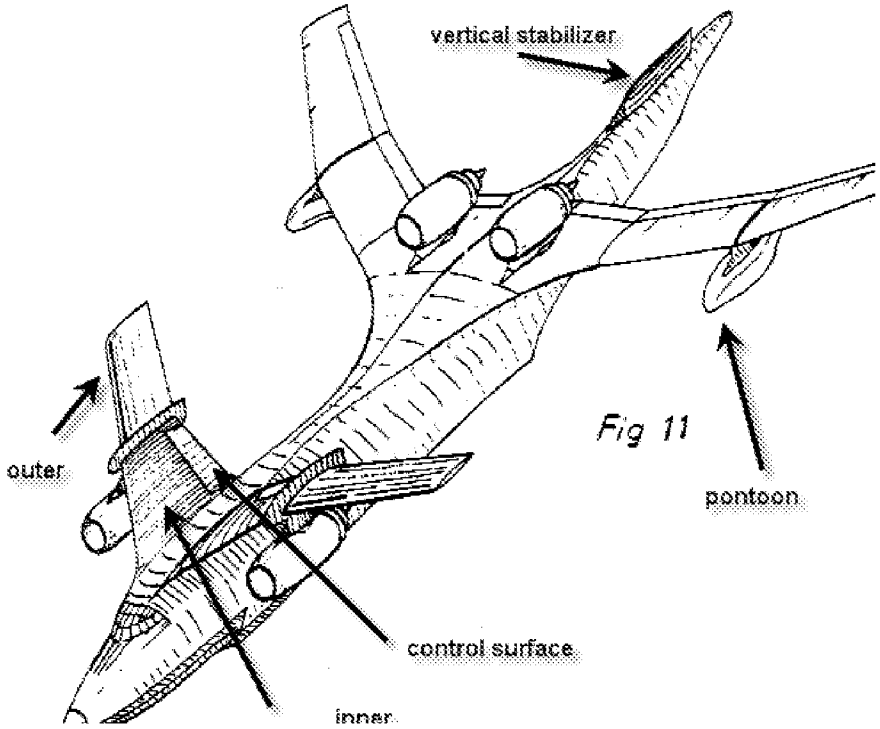

Fig 11

18. Re claim 20, said canard forewing incorporates control surfaces (fig 11 above).

19. Re claim 25, said wing-in-ground-effect craft is amphibious (col 6, line 58 – col 7, line 10), and has a planing hull (col 6, line 67).

20. Re claim 27, said craft has a single vertical stabilizer (see fig 11 above) located at the rear thereof.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 7, 8, 11, 13, 16, 17, 19, 22, 24, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fraser.

It is noted, all the rejections under 35 USC 103 over Fraser (except to claims 30 and 31) below should be considered in view of BOTH embodiments of Fraser (figs 11 and 21) as set forth above.

21. Re claim 2, Fraser fails to teach that the forewing has from about 10% to about 40% of the area of the main wing, however it is at least suggested by figs 11 or 21. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the forewing have from about 10% to about 40% of the area of the main wing in order to optimize the lift to (drag + weight) ratio and, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

22. Re claim 7, Fraser fails to explicitly teach said dihedral configuration in its inner portion, said inner portion being disposed at a first angle of inclination from the vertical, said canard forewing having its outer portions disposed at a second angle of inclination from the vertical which is greater in absolute terms than said first angle, however it is at least suggested by Fraser (see figs 11, 21, and 22).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Fraser at a first angle of inclination from the vertical, said canard forewing having its outer portions disposed at a second angle of inclination from the vertical which is greater in absolute terms than said first angle as suggested by the drawings above and/or in order to achieve the desired flow and lift characteristics to minimize drag and maximize lift.

23. Re claim 8, Fraser fails to explicitly teach said first angle lies from 80 to 65 degrees, however appears to at least suggest around about a 65 degree angle from the vertical (see fig 11 or 21). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have said first angle lies from 80 to 65 degrees because a sufficiently high dihedral angle will increase the aircraft lifting length and help attain a maximized area flow distribution, while enabling a desired augmentation to the rudder for yaw control and augmentation to the ailerons for roll control (achieve the desired dihedral effect), it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

24. Re claim 11, Fraser fails to explicitly teach said second angle lies from 85 to 95 degrees (anhedral angle, relative to the horizontal), however appears to at least suggest around about a 90 degree angle from the vertical (see fig 11 or 21). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have said second angle lies from 85 to 95 degrees to help attain a maximized area flow distribution, increase lift, while achieving the desired dihedral effect for roll stability, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

25. Re claims 13, 17, 19, Fraser fails to teach the dihedral configuration has an angle of attack from 2 to 9 degrees. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the dihedral configuration has an angle of attack from 2 to 9 degrees to achieve the desired lift at slow speeds and achieve the desired stall speed during cruise conditions, it has been held that where the general conditions of a claim are disclosed in

the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. In other words, through routine experimentation, one of ordinary skill would be able to utilize known techniques to maximize the lift to drag ratio given design flight speeds, weight, drag, angle of incidence of the wings and canards, etc.

26. Re claim 16, Fraser fails to teach the outer portions have angle of attack less than the inner portions. However, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify matter of design choice to have the outer and inner portions of the canard have different angles of attack relative to each other where the outer angle is less than the inner angle in order to achieve the desired lift at slow speeds and achieve the desired stall speed during cruise conditions and also it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In other words, through routine experimentation, one of ordinary skill would be able to utilize known techniques to maximize the lift to drag ratio given design flight speeds, weight, drag, angle of incidence of the wings and canards, etc.

27. Re claims 22 and 24, Fraser fails to teach the main wing has an angle of attack from 2 to 6 degrees. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the main wing angle of attack from 2 to 6 degrees to achieve the desired lift at slow speeds and achieve the desired stall speed during cruise conditions, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. In other words, through routine experimentation, one of ordinary skill would be able to

utilize known techniques to maximize the lift to drag ratio given design flight speeds, weight, drag, angle of incidence of the wings and canards, etc.

28. Re claim 30, Fraser fails to teach the craft incorporates a spade rudder which would be disposed so as to be immersed below a water when the craft is afloat.

The Examiner takes official notice it is old and well known in the art that a spade rudder is used with a vehicle for steering when afloat and the spade rudder is disposed below the water line.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Fraser to comprise a spade rudder as it is old and well known in the art and in order to provide a more effect means to steer when the craft is afloat.

29. Re claim 31, as best understood, Frasier fails to teach said craft includes a further propulsion unit in the form of a water propulsion means extending below said hull, in the form of a retractable leg.

The Examiner takes official notice it is old and well known in the art for a water propulsion means extending below said hull, to be in the form of a retractable leg.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Fraser to comprise of a water propulsion means extending below said hull, to be in the form of a retractable leg as it is an old and well known device and it would provide redundant power to the craft during takeoff and provide a means to drive the craft when in a docking area.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fraser in view of McCarty (US 3,614,033).

30. Re claim 26, Fraser discloses a main wing that incorporates pontoons (see fig 11 above), but fails to teach the pontoons are located at the outer most extremity of the main wing.

McCarty discloses it is a known option to place pontoons (26) on the outer most extremities of main wings (fig 1).

Thus, it would have been obvious for one of ordinary skill in the art at the time the invention was made to try and modify Fraser to have the pontoons located on the outer most extremity of the wing because it is a known design alternative and a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.

Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fraser in view of Jacobson (US 6,014,940).

31. Re claims 28 and 29, Fraser discloses the apparatus as in claim 27 wherein it is at least suggested that any suitable number of engines can be used in the rear location and greater load lifting capacity may be achieved if flow at a low altitude. In other words, the Examiner asserts that with the increased lift capacity for surface effect flight one engine may be all that is required and any number can be used as an option as set forth by Fraser.

But fails to teach said vertical stabilizer is located atop a first propulsion unit in the form of a ducted fan and includes at least one rudder control surface located in the flow pathway of said ducted fan.

Jacobson discloses it is known for a surface effect craft to have a vertical stabilizer (unlabeled) mounted on top of a ducted fan (32) and a control rudder (34) in the flow path of the fan.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to substitute the engines and fin arrangement for the alternative arrange of Jacobson in order to achieve the improved result of vertical stability and providing turning and yaw control as taught by Jacobson (col 4, lines 38 – 47).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Brubaker (US 4,080,922): Canard and main wing and engine mounted on top of vertical stabilizer (see all figures).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA J. MICHENER whose telephone number is (571)272-1467. The examiner can normally be reached on Monday through Friday 7-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Mansen can be reached on 571-272-6608. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joshua J Michener
Examiner
Art Unit 3644

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Examiner, Art Unit 3644